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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,895	03/23/2005	Malcolm Paul Varnham	SO01-P12	8834

7590 03/16/2006
John Reid
Reidlaw
1926 S Valleyview Lane
Spokane, WA 99212-0127

EXAMINER

WOOD, KEVIN S .

ART UNIT PAPER NUMBER

2874

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/528,895

Applicant(s)

VARNHAM ET AL.

Examiner

Kevin S. Wood

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 21-26, 29-35, 38-40 is/are rejected.
- 7) ☒ Claim(s) 27, 28, 36 and 37 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/23/05</u> . | 6) <input type="checkbox"/> Other: ____. |

NON-FINAL REJECTION

Response to Amendment

1. The Preliminary Amendment filed on 23 March 2005 has been entered. Claims 1-20 have been cancelled. New claims 21-40 have been added. Claims 21-40 are currently pending in the application.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because: the reference characters "3" and "21" have both been used to designate the stress applying part in Fig. 2; and the reference characters "4" and "11" have both been used to designate the stress applying part in Fig. 11. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 21-26, 29-35 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,563,995 to Keaton et al. in view of *Single-Polarisation Operation of Highly Birefringent Bow-Tie Optical Fibers* by Varnham et al.

Referring to claim 21, the Keaton et al. reference discloses an optical fiber, wherein: the core (12) is defined by a numerical aperture; the optical fiber (10) is configured such that the waveguide supports multiple modes; the waveguide comprises a gain medium (60); and the stress is applied to either the core or cladding in order to provide preferential guidance to at least one of the modes at an operating wavelength. See Fig. 1-8 along with their respective portions of the specification. The Keaton et al.

reference discloses all the limitations of the claimed invention, except the reference does not appear to specifically disclose stress applying regions defined by a depressed refractive index for applying the stress. The Varnham et al. reference discloses an optical fiber having stress applying regions defined by a depressed refractive index for the purpose of inducing birefringence causing the preferential guiding of one of the polarization modes at an operating wavelength. Since the Keaton et al. reference and the Varnham et al. reference are both from the same field of endeavor. The purpose disclosed by Varnham et al. would have been recognized within the pertinent art of Keaton et al. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the depressed refractive index stress applying parts disclosed by Varnham et al. as a means for applying stress to the core or cladding of the Keaton et al. optical fiber, for the purpose of providing preferential guidance to one of the polarization modes at an operating wavelength.

Referring to claim 22, the Keaton et al. reference in view of the Varnham et al. reference discloses all the limitations of the claimed invention. It is obvious that the optical fibers may be bent. See Fig. 1-8 along with their respective portions of the specification.

Referring to claims 23 and 24, the Keaton et al. reference in view of the Varnham et al. reference discloses all the limitations of the claimed invention. The Keaton et al. reference discloses that the gain medium (60) may be Ytterbium, Erbium, Thulmium, Holmium, Neodymium or a combination these rare earth elements. See Fig. 1-8 along with their respective portions of the specification.

Referring to claim 25, the Keaton et al. reference in view of the Varnham et al. reference discloses all the limitations of the claimed invention. The Keaton et al. reference discloses the optical fiber has at least one leaky mode. See Fig. 1-8 along with their respective portions of the specification.

Referring to claim 26, the Keaton et al. reference in view of the Varnham et al. reference discloses all the limitations of the claimed invention. The Keaton et al. reference discloses the optical fiber can be configured to operate as a single polarization optical fiber by applying stress to the core or cladding. See Fig. 1-8 along with their respective portions of the specification.

Referring to claims 29-32, the Keaton et al. reference in view of the Varnham et al. reference discloses all the limitations of the claimed invention. The Keaton et al. reference discloses an index difference of 0.0022. See Fig. 1-8 along with their respective portions of the specification. The Keaton et al. reference does not appear to specifically disclose that difference in refractive index is less than 0.002. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a refractive index difference of less than 0.002, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Referring to claims 33-35, the Keaton et al. reference in view of the Varnham et al. reference discloses all the limitations of the claimed invention. The Keaton et al. reference discloses the optical fiber has a photosensitive region in the form of the gain medium. See Fig. 1-8 along with their respective portions of the specification.

Referring to claims 38-40, the Keaton et al. reference in view of the Varnham et al. reference discloses all the limitations of the claimed invention. The Keaton et al. reference discloses the optical fiber can be used as an optical amplifier. See Fig. 1-8 along with their respective portions of the specification.

Allowable Subject Matter

6. Claims 27, 28, 36 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

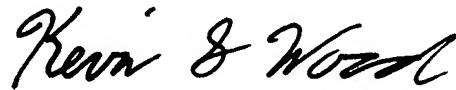
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S. Wood whose telephone number is (571) 272-2364. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink that reads "Kevin S. Wood". The signature is written in a cursive, flowing style.

Kevin S. Wood
Patent Examiner